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Exhibit A

Stakeholder	Rule Citation	Requested Change	Summary of Comment
Sierra Club	IRP Rule 015 (45)	<p>Original Text: Implementation plan means descriptions, costs, and schedules for the supply-side resources or quantity of supply-side resources by supply-side resource type, or both, to be constructed or acquired as part of the preferred resource plan over the implementation period and any other information required in accordance with 20 CSR 4240-21.065.</p> <p>Sierra Club Suggestion for Revised Text: Implementation plan means both (1) descriptions, costs, and schedules for the supply-side resources or quantity of supply-side resources by supply-side resource type, or both, to be constructed or acquired as part of the preferred resource plan over the implementation period and any other information required in accordance with 20 CSR 4240-21.065; and (2) descriptions, costs, and schedules for demand-side programs and other demand-side resources planned for the implementation period.</p>	<p>"[D]escription, costs, and schedules" describes the types of materials that must be provided. It should not be stricken. Sierra Club recommends that "descriptions, costs, and schedules" of demand-side measures also be a required part of implementation plans.</p>
Sierra Club	IRP Rule 015 (95)	<p>Original Text: Transmission losses means the amount of real power, expressed as a percentage, that is lost during the in transmission of electricity from generation resources facilities, when delivering energy to an electric utility's interconnection point load.</p> <p>Sierra Club Suggestion for Revised Text:</p>	<p>Something may have been struck in error here. The text currently reads "lost in transmission facilities." Sierra Club suggests that the Commission replace this with "lost in the transmission of electricity when delivering energy to load."</p>

		Transmission losses means the amount of real power, expressed as a percentage, that is lost during the in the transmission of electricity from generation resources facilities ; when delivering energy to an electric utility's interconnection point load .	
Sierra Club	IRP Rule 020 (2)(B)	Original Text: The To commence the pre-IRP proceeding, the electric utility shall occur :	General Comment: As edited, this section now begins with "...the electric utility shall" but contains items directed to the Commission. Additionally, there appears to be an error in which sub-bullet points come under the main bullet points. Sierra Club recommends rewording or reorganizing this section to clarify which entity (the Commission or utility companies) is responsible for which actions related to the pre-IRP proceeding.
Sierra Club	IRP Rule 020 (2)(B).6.	Original Text: Within three (3) months one (1) month of the electric utility filing in accordance with subsection (2)(A) of this rule the pre-IRP minimum filing requirements, the electric utility shall convene :	x
Sierra Club	IRP Rule 020 (2)(C).8.B.	Original Text: Reflect costs developed or incurred no more than 12 months prior to the pre-IRP minimum requirements filing date;	X

Sierra Club	IRP Rule 020 (2)(B).11.B.	<p>Original Text: If consensus is not achieved as contemplated in (2)(E)1, any party may request a hearing. The for commission shall issue an order no determination on unresolved issues.</p>	<p>General Comment: Sierra Club recommends adding more detailed specifications regarding timing of hearings and criteria for Commission to grant hearings. Since a Certificate of Convenience and Necessity (“CCN”) may result from the IRP process, these are consequential proceedings in which rights may be determined. The Commission should therefore specify hearing procedures.</p>
Sierra Club	IRP Rule 020 (2)(C).12.	<p>Original Text: The base-case capacity balance forecast includes shall include the existing supply-side resources through the currently expected life of each asset or contract, expected load growth over the planning horizon without additions of large load customers, and no resource additions.</p> <p>Sierra Club Suggestion for Revised Text: The base-case summer and winter capacity balance forecast includes shall include the existing supply-and demand-side resources through the currently expected life of each asset or contract, expected load growth over the planning horizon without additions of large load customers, and no resource additions.</p>	<p>This description of resources that are required to be included in the base-case forecast omits demand-side resources. Demand-side resource levels are a critical part of load forecasting and should be required for inclusion in the base-case forecast. Further, the utilities should be required to provide both summer and winter capacity balance.</p>
Sierra Club	IRP Rule 020 (2)(C).13.A.	<p>Original Text: Existing supply-side resources through the currently expected life of each asset or contract, expected;</p>	<p>Sierra Club recommends adding “supply-side resources owned/contracted by the large load entity” here for improved clarity.</p>

		<p>Sierra Club Suggestion for Revised Text: Existing supply-side resources owned/contracted by the large load entity through the currently expected life of each asset or contract, expected;</p>	
Sierra Club	IRP Rule 020 (4)(A)	<p>Original Text: And if the cost estimates the electric utility submitted in the IRP filing have materially changed, an electric utility may submit an update to the IRP filing on or before one hundred fifty (150) calendar days from the receiptsubmittal date of the electric utility's IRP filing; if the cost estimates have materially changed.</p>	<p>General Comment: This section omits discussion of what utilities should do in the event of cost updates that occur 150 days after filing, in the remaining 3.5 years until the next IRP. Sierra Club recommends inclusion of clear directions for how to address known cost changes during this period.</p>
Sierra Club	Former IRP Rule 020 (3)	<p>Original Text: (3) After a hearing is conducted, the commission shall issue a report and order no later than three hundred sixty days from the date the IRP filing was submitted, unless an extension is granted for good cause by the commission: (A) If the commission determines that the preferred resource plan is a reasonable and prudent means of meeting the electric utility's load-serving obligations, such determination shall constitute the commission's permission for the electric utility to construct or acquire the specified supply-side resources, or a specified quantity of supply-side resources by supply-side resource type, or both, identified by the commission, that were reflected in the implementation plan submitted in accordance with 20 CSR 4240-21.065.</p>	<p>General Comment: This stricken language regarding actions the Commission will take after a hearing is not replaced or otherwise addressed in the updated rulemaking. Sierra Club recommends not to strike. This rulemaking should include clear language describing potential related hearings, how the Commission will determine their need, the structure of the proceedings, and general guardrails regarding their timing. Since a CCN may result from the IRP, these are consequential proceedings, and</p>

		<p>(B) If the commission determines that the preferred resource plan, in whole or in part, is not a reasonable and prudent means of meeting the electric utility's load-serving obligations, the commission shall specify in its report and order the deficiencies in the preferred resource plan and may require the electric utility to make a further filing within sixty (60) days after issuance of the report and order to address the deficiencies. The electric utility shall file a revised IRP addressing the deficiencies and may propose modifications to its original preferred resource plan:</p> <p style="padding-left: 40px;">1.—Any other party to the IRP docket shall have sixty (60) days to respond to the electric utility's updated IRP filing, unless the commission grants an extension for good cause.</p> <p style="padding-left: 40px;">2.—Within sixty days after the deadline for such other parties' filings, the commission shall issue a report and order indicating whether the deficiencies have been cured by the electric utility's revised IRP filing and the commission may approve the electric utility's modified preferred resource plan and may approve specific supply-side resources, or a specified quantity of supply-side resources by supply-side resource type, or both.</p> <p>(C) If the commission finds continued deficiencies in the electric utility's revised preferred resource plan:</p>	<p>hearing procedures should be specified.</p>
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		<p>1.—The commission may initiate a complaint proceeding pursuant to the provisions of section 393.270 RSMo; and</p> <p>2.—The electric utility shall not be eligible for a limited inquiry in any proceeding under section 393.170 RSMo as set forth in section 393.1900 RSMo.</p>	
Sierra Club	IRP Rule 020 (5)(C)	<p>Original Text:</p> <p>If the electric utility contends that, despite the proposed changes to its preferred resource plan identified in subsection (5)(A), certain supply-side resources previously identified by the commission, shall be conducted as eligible for limited inquiry CCN remain materially consistent with the approved preferred resource plan the electric utility shall include in its notification:</p> <ol style="list-style-type: none"> 1. Identification of such supply-side resources or quantities by supply-side resource type; 2. Supporting explanation; and 3. Discussion of any impact on the electric utility’s ability to timely meet customer energy needs if such supply-side resources are delayed. <p>A limited inquiry CCN should only issue as a result for the IRP, if the utility has complied with all requirements of the IRP Rule.</p>	<p>General Comment:</p> <p>This appears to be the only mention of the CCN aspect of this IRP rulemaking. Sierra Club recommends that the IRP’s functions and requirements as a CCN be more comprehensively described in the rulemaking. In particular, throughout the rulemaking greater clarity is needed regarding which references to ‘resources’ refer to generic resources and which to specific named resources. The implications for planning and evaluation that arise from each of these circumstances are quite different.</p> <p>Somewhere in the Rule, the Commission should make it clear that a limited inquiry CCN should only be issued if the utility complies with all aspects of the Rule.</p>

Sierra Club	IRP Rule 025 (7)	<p>Original Text: The Within two (2) business days of the electric utility submitting the IRP filing, the electric utility shall make available to the stakeholder group stakeholders all data, modeling inputs, assumptions, and results for the preferred alternative resource plan plans pursuant to 20 CSR 4240-21.060(4) and for all major risk scenarios and sensitivity analyses, not solely for a single base case. pursuant to 20 CSR 4240-21.060(4).</p> <p>Sierra Club Suggestion for Revised Text: The Within two (2) business days of the electric utility submitting the IRP filing, the electric utility shall make available to the stakeholder group stakeholders all data, modeling inputs, assumptions, and results, workpapers, and other referenced materials for the preferred and alternative resource plan plans pursuant to 20 CSR 4240-21.060(4) and for all major risk scenarios and sensitivity analyses, not solely for a single base case. pursuant to 20 CSR 4240-21.060(4).</p>	<p>Sierra Club recommends adding "workpapers" and "other referenced materials" to "all data, modeling inputs, assumptions, and results" for a more comprehensive request.</p> <p>The Commission should replace "for the alternative resource plans" with "for the preferred and alternative resource plans" to clarify that detailed materials regarding the development of the preferred resource plan are required. (This improved language would reduce the risk that "alternative resource plans" be misconstrued as not inclusive of the preferred resource plan.)</p>
Sierra Club	IRP Rule 030 (1)(A)	<p>Original Text: The electric utility shall develop load forecasts using the best available, transparent, and verifiable data. The electric utility shall document that it is using the best available data. Where reliable data is not available, the electric utility may use estimates only for variables involving customer behavior, new technologies, or market trends for which no historical data exists, provided that the variables are electric utility fully justified justifies and clearly documented documents the estimates.</p> <p>Sierra Club Suggestion for Revised Text:</p>	<p>Sierra Club recommends against these changes which substantially weaken this section. It is important for accountability and transparency that utility documents are using the best available data. The limitations on what variables may be estimated are also critical. It would be preferable if the Commission provided a list of which variables <u>can</u> be estimated. For large load customers, there is a presumption</p>

		<p>The electric utility shall develop load forecasts using the best available, transparent, and verifiable data. The electric utility shall document that it is using the best available data. Where reliable data is not available, the electric utility may use estimates only for variables The following variables may be estimated involving customer behavior, new technologies, or market trends for which no historical data exists, provided that the variables are electric utility fully justified justifies and clearly documented documents the estimates:</p> <p>Any limited inquiry CCN that is issued as a consequence of the IRP shall be based on the high probability load forecast.</p> <p>.</p>	<p>that such loads should be included in the base forecast only when binding electric service agreements are signed (i.e., phases 3, 4, and 5 as outlined in IRP Rule 030 (6)).</p>
Sierra Club	IRP Rule 030 (1)(E)	<p>Original Text: Where employing end-use forecasting is employed, the electric utility shall use the most current available data on appliance saturation, efficiency trends, and customer adoption of new technologies, including distributed energy resources (DER) and demand-side measures. Descriptive The electric utility shall describe and document the descriptive statistics for each end-use variable shall be described and documented.</p> <p>Revised Text: Where employing end-use forecasting is employed, the electric utility shall use the most current available data on appliance saturation, efficiency trends, and customer adoption of new technologies, including distributed energy resources (DER) and demand-side</p>	<p>The Commission should change “the utility shall describe and document the descriptive statistics” to “the utility shall describe, document, and provide the descriptive statistics.” This addition ensures that the utility is aware of its requirement to provide these statistics to stakeholders.</p>

		measures. Descriptive The electric utility shall describe, and document, and provide the descriptive statistics for each end-use variable shall be described and documented.	
Sierra Club	IRP Rule 030 (1)(G)	<p>Original Text: Applicable The electric utility shall include data for applicable federal, state, and local laws, regulations, and policies that affect energy consumption, including energy efficiency standards, electrification initiatives, and decarbonization requirements. The electric utility shall quantify and document the expected load impacts of each applicable policy or mandate.</p> <p>Sierra Club Suggestion for Revised Text: Applicable The electric utility shall include data for applicable federal, state, and local laws, regulations, and policies that affect energy consumption, including energy efficiency standards, electrification initiatives, and decarbonization requirements. The electric utility shall quantify and document the expected load impacts of each applicable policy or mandate.</p>	Sierra Club recommends not to strike the last sentence; its removal substantially weakens this section. Robust load forecast modeling and documentation should include the expected load impacts of policies and mandates.
Sierra Club	IRP Rule 030 (1)(I)	<p>Original Text: The electric utility shall ensure the forecast shall be internally consistent is generally aligned with the energy efficiency potential assessment, including alignment of baseline conditions such as new housing and commercial building starts, appliance saturations, employment growth, federal standards, building codes, and program offerings.</p> <p>Sierra Club Suggestion for Revised Text:</p>	Sierra Club recommends against this revision. The term "generally aligned" is less robust in comparison to "internally consistent." Consistency with energy efficiency potential assessments is a critical part of accurate load forecasting.

		<p>The electric utility shall ensure the forecast shall be internally consistent is generally aligned be internally consistent with the energy efficiency potential assessment, including alignment of baseline conditions such as new housing and commercial building starts, appliance saturations, employment growth, federal standards, building codes, and program offerings.</p>	
Sierra Club	IRP Rule 030 (1)(K)	<p>Original Text: The electric utility shall ensure the forecast shall account accounts for the effects of electricity prices, competing fuel prices real price of competitive energy sources, and rate design on customer usage. This The electric utility shall include the price elasticity of demand, demand response programs, and the impacts of approved or pending rate structures such as time-of-use rates, demand charges, and dynamic pricing mechanism.</p> <p>Sierra Club Suggestion for Revised Text: The electric utility shall ensure the forecast shall account accounts for the effects of electricity prices, competing fuel prices real price of competitive energy sources, and rate design on customer usage. This The electric utility shall include the price elasticity of demand, demand response programs, and the impacts of approved or pending rate structures such as time-of-use rates, demand charges, and dynamic pricing mechanism, and provide reporting that includes forecasts with and without electricity price effects and the utility’s methodology for incorporating this effects in its forecasts.</p>	Sierra Club recommends the addition of language regarding reporting and/or demonstrating that the forecasts provided take electricity price effects into account and provide the methodology used.

Sierra Club	IRP Rule 030 (3)(K)	<p>Original Text: Provide The electric utility shall provide full documentation of all methodologies, assumptions, and data sources sufficient for replication, as outlined in 20 CSR 4240-21.025. Additionally—:</p> <ol style="list-style-type: none"> 1. The electric utility shall validate the forecast results shall be validated through benchmarking against historical load patterns and against any available independent forecasts published by regional transmission organizations, government agencies, or other credible sources; 2. The documentation electric utility shall includedescribe and document a retrospective analysis of past forecasts, evaluating an evaluation of forecast accuracy, identifying an identification of sources of error or bias, and explaining an explanation of how the electric utility used these findings were used to improve the current forecast; and 3. The electric utility shall producedescribe and document a forecast of net system load profiles for each year of the planning horizon. TheThe electric utility shall ensure the net system load forecast shall beis consistent with the electric utility’s forecasts of monthly energy and peak demands at the time of summer and winter system peaks for each customer class. <p>Sierra Club Suggestion for Revised Text: Provide The electric utility shall provide full documentation of all methodologies, assumptions,</p>	Sierra Club recommends that the required load forecasting methodology include provisions of all forecasts by scenario and customer class of: (1) customer counts and (2) average use per customer. This detailed information greatly improved the quality of evaluations of the load forecasts by permitting the disaggregation of different types of causes and effects.
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		<p>and data sources sufficient for replication, as outlined in 20 CSR 4240-21.025. Additionally—:</p> <ol style="list-style-type: none"> 1. The electric utility shall validate the forecast results shall be validated through benchmarking against historical load patterns and against any available independent forecasts published by regional transmission organizations, government agencies, or other credible sources; 2. The documentation electric utility shall included describe and document a retrospective analysis of past forecasts, evaluating an evaluation of forecast accuracy, identifying an identification of sources of error or bias, and explaining an explanation of how the electric utility used these findings were used to improve the current forecast; and 3. The electric utility shall produced describe and document a forecast of net system load profiles for each year of the planning horizon. The The electric utility shall ensure the net system load forecast shall be is consistent with the electric utility’s forecasts of monthly energy and peak demands at the time of summer and winter system peaks for each customer class. 4. The utility shall provide all forecasts by scenario and customer class of: (1) customer counts and (2) average use per customer. 	
Sierra Club	Former IRP Rule 030 (4)(A)	<p>Original Text: The electric utility shall disaggregate its load forecasts into base load forecasts, representing expected energy consumption and system non-</p>	Sierra Club recommends against striking. Presentation of load forecast both with and without demand-side measures is a

		<p>coincident peak absent each demand-side resource as identified in 20 CSR 4240 21.050. The electric utility shall separately provide forecasted demand and energy impacts for each demand-side resource, representing the expected load impacts of demand-side measures during the anticipated hours, seasons, and years, on reducing or shifting load.</p> <p>Sierra Club Suggestion for Revised Text: The electric utility shall disaggregate its load forecasts into base load forecasts, representing expected energy consumption and system non-coincident peak absent each demand-side resource as identified in 20 CSR 4240 21.050. The electric utility shall separately provide forecasted demand and energy impacts for each demand-side resource, representing the expected load impacts of demand-side measures during the anticipated hours, seasons, and years, on reducing or shifting load.</p>	<p>common and important tool in understanding the assumptions used to construct the forecasts.</p>
Sierra Club	IRP Rule 030 (6)	<p>Original Text: Identification of Large Load Drivers:Database (A) The electric utility shall provide a list of committed large loads within that electric utility's service territory that would be eligible for service under the electric utility's large load tariff approved in accordance with section 393.130.7., RSMo. The information provided shall include at a minimum: (A) The electric utility shall collect and maintain a large load database consisting of:</p> <ol style="list-style-type: none"> 1. Anonymized project identifier; 2. The customer'sLarge load project's industry type; 	<p>Sierra Club recommends that this description of a large load database includes language clarifying that the database should include existing, past, and newly proposed large loads. This information will help put proposed loads into context and create a useful database of all large loads.</p>

		<p>3. The Large load project's anticipated service location;</p> <p>4.3. The expected load shape (daily, seasonal, and annual); and</p> <p>5. The anticipated peak and annual energy requirements including when the electric utility expects contracted load to appear or change over the implementation plan period</p> <p>4. Large load metrics defined in 20 CSR 4240-21.015(50).</p> <p>(B) The electric utility shall categorize the maturity of large load projects by the following phases:</p> <p>1. Utility study phase. Large load projects in this phase have submitted any required information, preliminary agreements, and deposits in compliance with the electric utility's approved tariffs and business practices;</p> <p>2. RTO study phase. Large load projects in this phase have been submitted to the RTO for additional study;</p> <p>3. Execution phase. Large load projects in this phase have executed an electric service agreement, interconnection agreement, and posted any required security or deposits;</p> <p>4. Initial project energization. Large load projects in this phase receive retail electric service but have not reached full forecast peak load; and</p> <p>5. Load ramping complete. Large load projects in this phase have reached full forecast peak load.</p> <p>Sierra Club Suggestion for Revised Text: Identification of Large Load Drivers Database</p>	
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		<p>(A) The electric utility shall provide a list of committed large loads within that electric utility's service territory that would be eligible for service under the electric utility's large load tariff approved in accordance with section 393.130.7., RSMo. The information provided shall include at a minimum:</p> <p>(A) The electric utility shall collect and maintain a large load database of existing, past proposed, and newly proposed large loads consisting of:</p> <ol style="list-style-type: none"> 1. Anonymized project identifier; 2. The customer's Large load project's industry type; 3. The Large load project's anticipated service location; 4. 3. The expected load shape (daily, seasonal, and annual); and 5. The anticipated peak and annual energy requirements including when the electric utility expects contracted load to appear or change over the implementation plan period <p>4. Large load metrics defined in 20 CSR 4240-21.015(50).</p> <p>(B) The electric utility shall categorize the maturity of large load projects by the following phases:</p> <ol style="list-style-type: none"> 1. Utility study phase. Large load projects in this phase have submitted any required information, preliminary agreements, and deposits in compliance with the electric utility's approved tariffs and business practices; 2. RTO study phase. Large load projects in this phase have been submitted to the RTO for additional study; 3. Execution phase. Large load projects in this phase have executed an electric service agreement, 	
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		<p>interconnection agreement, and posted any required security or deposits;</p> <p>4. Initial project energization. Large load projects in this phase receive retail electric service but have not reached full forecast peak load; and</p> <p>5. Load ramping complete. Large load projects in this phase have reached full forecast peak load.</p>	
Sierra Club	IRP Rule 030 (7)(A)	<p>Original Text: The electric utility shall prepare describe and file document distinct forecasts of potential representing large load customer scenarios that are reasonably anticipated to materially affect the system load shape or resource needs for the planning horizon.</p> <p>Sierra Club Suggestion for Revised Text: “Reasonably anticipated,” including only loads that are contractually bound by signed electric service agreements to take service (i.e., phases 3, 4, and 5 as outlined in IRP Rule 030 (6)).</p>	<p>General Comment: Sierra Club recommends that the Commission define “reasonably anticipated” and not leave it open to the utilities to define. “Reasonably anticipated” leaves too much latitude for interpretation.</p> <p>Sierra Club recommends the following definition for “reasonably anticipated”: including only loads that are contractually bound by signed electric service agreements to take service (i.e., phases 3, 4, and 5 as outlined in IRP Rule 030 (6)).</p>
Sierra Club	IRP Rule 030 (7)(D).1-3.	<p>Original Text: For each large load customer scenario, the electric utility shall—</p> <p>1. Utilize the large load database in section (6);</p> <p>2. Describe and document the methodology, data sources, and assumptions used to forecast load along with a justification showing that assumptions are reasonable, transparent, and based on the best available non-speculative information;</p>	

		<p>2. Provide a table listing the industry type, location, expected load shape (daily, seasonal, and annual); anticipated peak and annual energy requirements;</p> <p>3. Assess and document the certainty of probable large load customers;</p> <p>4. Describe the expected load profile by month;</p> <p>5. Identify changes in project certainty or status compared with prior forecasts and explain the criteria or information that led to recategorization;</p> <p>3. Incorporate alternative forecasts reflecting the interconnection of large load customers in For the first eight (8) five (5) years of the planning horizon, construct large load scenarios based upon the estimation of assigned project maturity phases outlined in subsection (6)(B) including at minimum—</p> <p>A. A high probability of interconnection—scenario that reflects only those projects that meet the criteria stated in paragraphs (6)(B)3., (6)(B)4. and (6)(B)5;</p> <p>1. Ninety-five (95) percent (%) probability of interconnection;</p> <p>2. Ninety (90) percent (%) probability of interconnection;</p> <p>3. Fifty (50) percent (%) probability of interconnection;</p> <p>and</p> <p>B. A stress scenario reflecting early termination of a large load customer or other stress A medium probability scenario that reflects only those projects that meet the criteria stated in paragraphs (6)(B)2., (6)(B)3., (6)(B)4. and (6)(B)5;</p> <p>C. A low probability scenario that reflects only those projects that meet the criteria stated in paragraphs (6)(B)1., (6)(B)2., (6)(B)3., (6)(B)4. and (6)(B)5; and</p>	
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		B-D. Any scenarios determined to be significant from the electric utility perspective; or as ordered by the commission.	
Sierra Club	IRP Rule 035 (1)(A)	<p>Original Text: The electric utility shall identify and evaluate a variety of potential supply-side resource options for purposes of resource planning, which the electric utility can reasonably expect to use, develop, implement, or acquire. Potential supply-side resource options include but are not limited to:</p> <ol style="list-style-type: none"> 1. Full or partial ownership of new plants using existing generation technologies; 2. Full or partial ownership of new plants using new generation technologies, including technologies expected to become commercially available within the planning horizon; meaning an operational pilot of 10 MW or greater; 3. Renewable energy resources on the electric utility-side of the meter, including a wide variety of renewable generation technologies; 4. Technologies for distributed generation; 5. Technologies for storage; 6. Purchased power from bi-lateral transactions and from organized capacity and energy markets; 7. Upgrading of the transmission and distribution systems as identified in 20 CSR 4240-21.040; 8. Life extension and refurbishment of assets at existing generating plants, including but not limited to, mothballing; 	Sierra Club recommends adding language on “technologies for storage” to specify the types of technologies that the electric utilities should consider, including different durations of storage (e.g., 4-hr, 8-hr, etc.) as well as both standalone and paired storage configurations. Paired storage systems, such as storage coupled with renewable generation, can provide additional operational and economic benefits by improving resource utilization, enhancing dispatchability, and increasing energy and capacity value. Since these storage technologies have distinct operating characteristics and performance capabilities, they should be considered separately as potential supply-side resource options.

		<p>9. Enhancement of the emission controls at existing generating plants; and</p> <p>10. Generating plant efficiency improvements which reduce the electric utility's own use of energy.</p> <p>Sierra Club Suggestion for Revised Text: The electric utility shall identify and evaluate a variety of potential supply-side resource options for purposes of resource planning, which the electric utility can reasonably expect to use, develop, implement, or acquire. Potential supply-side resource options include but are not limited to:</p> <ol style="list-style-type: none"> 1. Full or partial ownership of new plants using existing generation technologies; 2. Full or partial ownership of new plants using new generation technologies, including technologies expected to become commercially available within the planning horizon; meaning an operational pilot of 10 MW or greater; 3. Renewable energy resources on the electric utility-side of the meter, including a wide variety of renewable generation technologies; 4. Technologies for distributed generation; 5. Technologies for storage, including various durations (4-hr, 8-hr, etc) as well as standalone and paired storage configurations; 6. Purchased power from bi-lateral transactions and from organized capacity and energy markets; 	
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		<p>7. Upgrading of the transmission and distribution systems as identified in 20 CSR 4240-21.040;</p> <p>8. Life extension and refurbishment of assets at existing generating plants, including but not limited to, mothballing;</p> <p>9. Enhancement of the emission controls at existing generating plants; and</p> <p>10. Generating plant efficiency improvements which reduce the electric utility's own use of energy.</p>	
Sierra Club	IRP Rule 035 (1)(B)	<p>Original Text: In identifying and evaluating potential supply-side resources, the electric utility shall describe and document its existing supply-side resources including but not limited to:</p> <ol style="list-style-type: none"> 1. Unit characteristics; 2. Current and expected accredited capacity by season; 3. Licensing status; 4. Current depreciation rates for each generating unit; 5. Currently expected retirement dates; and 6. If applicable, any remaining useful life of each generating unit. 	<p>General Comment: Sierra Club recommends adding a requirement to conduct robust retirement analyses that evaluate a range of retirement timing options for existing resources, including opportunities for retirement. Analyses should not exclusively rely on pre-determined retirement dates and should assess individual generating units separately where feasible. Modeling both with fixed retirement dates and permitting optimized retirement is important for a full understanding of potential resource retirement outcomes. This recommendation would provide greater transparency into the costs, benefits, and system impacts of retirement options for individual resources.</p>

Sierra Club	IRP Rule 035 (1)(C)	<p>Original Text: The electric utility shall describe and document its analysis including provision of cost and performance information sufficient to fairly analyze and compare each of these existing and potential supply-side resource options established in subsection (1)(A) of this rule,, including, but not limited to, those attributes needed to individually assess the following cost categories by resource:</p> <ol style="list-style-type: none"> 1. Capital cost, including, for capital projects that are reasonably expected to result in the extension of the retirement date of each generating unit; 2. Fixed and variable operation and maintenance costs; 3. Probable environmental compliance costs; and 4. Unit characteristics and attributes. <p>Sierra Club Suggestion for Revised Text: The electric utility shall describe and document its analysis including provision of cost and performance information sufficient to fairly analyze and compare each of these existing and potential supply-side resource options established in subsection (1)(A) of this rule,, including, but not limited to, those attributes needed to individually assess the following cost categories by resource:</p> <ol style="list-style-type: none"> 1. Capital cost, including, for capital projects that are reasonably expected to result in the extension of the retirement date of each generating unit; 	<p>Fixed and variable operation and maintenance costs should be reported separately to improve transparency and support consistent evaluation of project economics, resource utilization, and cost-effectiveness across alternatives. To the extent the utility considers any fuel costs to be fixed, it should quantify fixed and variable fuel costs for the specific generating unit and should explain why certain fuel costs are considered fixed. As currently worded, utilities may instead choose to report combined fixed and variable operations and maintenance costs.</p>
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		<ol style="list-style-type: none"> 2. Fixed operation and maintenance costs and variable operation and maintenance costs, reported separately; 3. Probable environmental compliance costs; and 4. Unit characteristics and attributes. 	
Sierra Club	IRP Rule 035 (2)(C).3.C.	<p>Original Text: The electric utility shall specify a A subjective probability that represents electric utility decision-maker’s judgment of the likelihood that legal mandates requiring additional levels of mitigation will be imposed at some point within the planning horizon. ; and</p>	<p>General Comment: Sierra Club recommends that the Commission provide specific guidance here to assure that state goals and mandates are achieved and to achieve consistency across utilities.</p>
Sierra Club	IRP Rule 035 (3)(E)	<p>Original Text: The electric utility shall develop, and describe and document, ranges of values and probabilities for several important uncertain factors related to supply-side candidate resource options. These cost estimates shall include, at least a minimum, the following elements, as applicable to the supply-side candidate resource option:</p> <ol style="list-style-type: none"> 1. Fuel price forecasts, including fuel delivery costs and pipeline interconnection costs if applicable, over the planning horizon for the appropriate type and grade of primary fuel and for any alternative fuel that may be practical as a contingency option; 2. Estimated capital costs including engineering design, construction, testing, startup, and certification of new facilities or major upgrades, refurbishment, or rehabilitation of existing facilities; 	<p>Compliance obligations imposed by federal environmental regulations could impact costs associated with certain supply-side resources. Sierra Club recommends adding an additional item to the numbered list requiring electric utilities to identify and provide a list of potential federal environmental regulations that could impact these resources as well as quantify the associated compliance costs.</p> <p>Key inputs and assumptions used for cost estimation should be provided along with cost estimates to enable stakeholders to evaluate the basis for the estimates, assess their reasonableness, and compare</p>

		<ol style="list-style-type: none"> 3. Estimated annual fixed and variable operation and maintenance costs over the planning horizon for new facilities or for existing facilities that are being upgraded, refurbished, or rehabilitated; 4. Forecasts of the annual cost or value of emission allowances to be used or produced by each generating facility over the planning horizon, if applicable; 5. Annual fixed charges for any facility to be included in the rate base, or annual payment schedule for leased or rented facilities; and 6. Estimated costs of interconnection or other transmission requirements associated with each supply-side candidate resource option. <p>Sierra Club Suggestion for Revised Text: The electric utility shall develop, and describe and document, ranges of values and probabilities for several important uncertain factors related to supply-side candidate resource options. These cost estimates shall include, at least a minimum, the following elements and key inputs, as applicable to the supply-side candidate resource option:</p> <ol style="list-style-type: none"> 1. Fuel price forecasts, including fuel delivery costs and pipeline interconnection costs if applicable, over the planning horizon for the appropriate type and grade of primary fuel and for any alternative fuel that may be practical as a contingency option; 2. Estimated capital costs including engineering design, construction, testing, startup, and certification of new facilities or major 	<p>alternatives using a transparent and consistent framework. Sierra Club recommends adding an additional item to the numbered list requiring electric utilities to provide these key inputs for their supply-side candidate resource options.</p> <p>In addition, fixed and variable operation and maintenance costs should be reported separately to improve transparency and support consistent evaluation of project economics, resource utilization, and cost-effectiveness across alternatives.</p>
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		<p>upgrades, refurbishment, or rehabilitation of existing facilities;</p> <ol style="list-style-type: none"> 3. Estimated annual fixed operation and maintenance costs and variable operation and maintenance costs, provided separately, over the planning horizon for new facilities or for existing facilities that are being upgraded, refurbished, or rehabilitated; 4. Forecasts of the annual cost or value of emission allowances to be used or produced by each generating facility over the planning horizon, if applicable; 5. Annual fixed charges for any facility to be included in the rate base, or annual payment schedule for leased or rented facilities;and 6. Estimated costs of interconnection or other transmission requirements associated with each supply-side candidate resource option; 7. Estimated compliance costs associated with potential federal environmental regulations that could impact each supply-side candidate resource option; and 8. Additional inputs critical to cost estimation including expected capacity factors and required capacity credits. 	
Sierra Club	IRP Rule 035 (3)(F)	<p>Original Text: The electric utility shall develop, describe and document; ranges of values and probabilities for the factors related to the impact of implementing alternative fuel options considered for supply-side candidate resource options on the assumptions.</p> <p>Revised Text:</p>	Sierra Club recommends adding a requirement for submitting information about expected market supply and costs for these fuels in each modeled year.

		The electric utility shall develop, describe and document; ranges of values and probabilities for the factors related to the impact of implementing alternative fuel options considered for supply-side candidate resource options on the assumptions as well as expected market supply and costs for these fuels in each modeled year.	
Sierra Club	IRP Rule 040 (2)(D)	<p>Original Text: The electric utility shall develop and provide a hosting capacity map to identify areas on its distribution system that may be suitable for distributed energy resources.</p> <p>Sierra Club Suggestion for Revised Text: The electric utility shall develop and provide a hosting capacity map to identify areas on its distribution system that may be suitable for distributed energy resources, as well as information regarding feeders at or near capacity that might need upgrades given new load from electrification or other reasons.</p>	Sierra Club recommends adding a requirement for submitting information regarding feeders at or near capacity that might need upgrades given new load from electrification or other reasons.
Sierra Club	IRP Rule 060 (1)(B)	<p>Original Text: All electric utility performance measures shall be transparent, reproducible, and provide an objective comparison of the alternative resource plans analyzed in the electric utility’s integrated resource plan (IRP) filings.</p> <p>Revised Text: All electric utility performance measures shall be quantitative, transparent, reproducible, and provide an objective comparison of the alternative resource</p>	Sierra Club recommends requiring that performance measures be quantitative to better facilitate unbiased comparison of resource plans.

		plans analyzed in the electric utility’s integrated resource plan (IRP) filings.	
Sierra Club	IRP Rule 060 (2)(B)	<p>Original Text: The electric utility shall identify, describe and document all uncertain factors, assumptions and risks that could materially affect the performance of alternative resource plans over the planning horizon. These shall include, but are not limited to—</p> <p>Sierra Club Suggestion for Revised Text: The electric utility shall identify, describe, and document, and model all uncertain factors, assumptions and risks that could materially affect the performance of alternative resource plans over the planning horizon. These shall include, but are not limited to—</p>	Sierra Club recommends adding a requirement to “model” in addition to “identify, describe and document” all risks.
Sierra Club	IRP Rule 060 (3)(H)	<p>Original Text: The electric utility shall describe and document how it evaluated the adequacy of its the capacity expansion modeling by covering addressing—</p> <ol style="list-style-type: none"> 1. How the electric utility uses its capacity expansion optimization software for the development of alternative resource plans; 2. How the model identifies least-cost resource combinations under binding operational and reliability constraints; 3. How reserve margin and local clearing requirements are enforced in the model and how it is consistent with enforcement by the appropriate RTO/ISO along with an explanation of the possible penalties and negative outcomes for not meeting those requirements; 	Sierra Club recommends adding a requirement to submit: A complete list of any limits placed on resource adoption by the model, such as availability limited to maximum or minimum amounts, or in a limited set of the modeled years.

		<ol style="list-style-type: none"> 4. Whether supply-side resource selection results are sensitive to fuel and technology cost assumptions; 5. The degree to which the model’s capacity expansion logic is stable under multiple sensitivities; and 6. How candidate resources are screened, shortlisted, and represented in the optimization process. <p>Sierra Club Suggestion for Revised Text: The electric utility shall describe and document how it evaluated the adequacy of its the capacity expansion modeling by covering addressing—</p> <ol style="list-style-type: none"> 1. How the electric utility uses its capacity expansion optimization software for the development of alternative resource plans; 2. How the model identifies least-cost resource combinations under binding operational and reliability constraints; 3. How reserve margin and local clearing requirements are enforced in the model and how it is consistent with enforcement by the appropriate RTO/ISO along with an explanation of the possible penalties and negative outcomes for not meeting those requirements; 4. Whether supply-side resource selection results are sensitive to fuel and technology cost assumptions; 5. The degree to which the model’s capacity expansion logic is stable under multiple sensitivities; and 	
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		<p>6. How candidate resources are screened, shortlisted, and represented in the optimization process.</p> <p>7. Submit a complete list of any limits placed on resource adoption by the model such as availability limited to maximum or minimum amounts, or in a limited set of the modeled years, along with a justification each limit placed on resource adoption by the model.</p>	
Sierra Club	IRP Rule 060 (3)(K)	<p>Original Text: The electric utility may utilize alternative modeling techniques in addition to the requirements in subsection (2)(E of this rule G) to develop additional alternative resource plans</p>	<p>General Comment: Sierra Club recommends that consistency be examined between this language and subsection (G) in the same section. Subsection (G) requires capacity expansion modeling while subsection (K) allows for alternative techniques. Subsection (K) seems very broad and would allow little oversight.</p>
Sierra Club	IRP Rule 060 (5)(D).1.	<p>Original Text: Each The electric utility shall support each performance measure shall be supported by with quantitative analysis to the extent practicable and by with qualitative justification where necessary.</p> <p>Sierra Club Suggestion for Revised Text: Each The electric utility shall support each performance measure shall be supported by with quantitative analysis to the extent practicable and by with qualitative justification where necessary.</p>	<p>Sierra Club recommends striking “and with qualitative justification where necessary.” Qualitative analysis will make it more difficult to provide unbiased comparisons across resource plans.</p>

Sierra Club	IRP Rule 060 (6)(B)	<p>Original Text: Contingency Analysis.</p> <ol style="list-style-type: none"> 1. Contingency The electric utility shall develop a contingency analysis of the preferred resource plan shall be included to address significant deviations from base assumptions, including but not limited to— <ol style="list-style-type: none"> A. Market price changes for key components of selected resource types; B. Market price changes for capacity, energy, and ancillary services; C. Changes to tax incentives for all selected resource types; D. Restrictions on generation output from selected supply-side resource types; E. Load assumptions; and F. Ongoing litigation regarding existing resources. 2. Based on the contingency analysis, the electric utility shall— <ol style="list-style-type: none"> A. Identify, describe and document the expected risk mitigation strategies that may be employed as a result of the contingency analysis; and B. Identify the alternative resource plans that would best satisfy the performance measures in response to the contingency analysis. 	<p>General Comment: Sierra Club recommends that the Commission provide more specific requirements on, or limitations to, contingency analysis.</p>
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Exhibit B

Sierra Club's Suggested IRP Best Practices for Public Engagement

The typical Integrated Resource Planning process has far-reaching consequences for ratepayers across the state, but few opportunities exist for customers, especially residential customers, to weigh into the process. For the average residential ratepayer, for example, the IRP process is opaque and difficult to understand. Participation in the IRP process itself is largely precluded. Resource planning issues are left solely to processes like CCNs and rate cases, which are generally the outcomes of an IRP process and tend to have opportunities for public input. Through this IRP rulemaking, the Commission has an opportunity to incorporate ratepayer feedback much earlier in the process. If done correctly, meaningful public engagement could reduce friction in subsequent CCNs and rate cases as ratepayers will be much better educated and have clear opportunities to inform the energy decisions made on their behalf by regulated utilities.

The following are suggested best practices for community engagement during IRP processes. They are largely modeled after existing rate case public and community engagement models for other state agencies, such as the Missouri Department of Transportation during resurfacing projects.

IRP Best Practices for Utilities

1. Provide ample notice of IRP stakeholder meetings, hearings and other engagement opportunities through emails, texts, social media advertisements, and letters packaged in customer bills.
 - a. Offer translation materials or language interpretation at public meetings.
2. Provide no fewer than one virtual and two in-person rate-case style hearings in transit-accessible community centers across the utility territory for each IRP.
 - a. Provide on-the-record speaking opportunities for participants.
 - b. Schedule meetings at different times of the day to allow broader participation.
3. Provide an opportunity to comment on draft IRP assumptions later in the IRP process. Respond in writing to all comments received and post an up-to date 'Response to Comments' document online.
4. Require third-party surveys asking for customer feedback on generation sources, costs, and externalities and publicly share the results of these surveys.
5. Community engagement should incorporate a variety of opportunities beyond stakeholder meetings and hearings, including:
 - a. Interactive workshops;
 - b. Online feedback mechanisms;
 - c. Town halls;
 - d. Public comment periods.

6. Maintain a glossary of key terms on the IRP website to translate technical terms for the layperson.
7. Use existing, established procedures and recommendations for engaging the public and designing a community engagement plan. Utilities should use these resources when designing their engagement:
 - a. <https://digital.gov/guides/public-participation/>
 - b. <https://www.epa.gov/international-cooperation/public-participation-guide-introduction-public-participation>
 - c. <https://www.iap2.org/page/pillars>

IRP Best Practices for the Public Service Commission

1. Seek to write final orders in a contested IRP proceeding in a manner that can be understood by a layperson. Consider including a plain language executive summary or other summation for such orders.
2. Consider feedback from the public in the deciding contested IRP proceedings. For example, the PSC could synthesize the top issues mentioned in public comments (as recommended above) and publicly communicate how those issues ought to be addressed in the IRP filing to facilitate its decision-making
3. Update the PSC website to allow any member of the public to file comments without navigating a complex user interface, removing barriers to civic participation.
4. Provide a general explain about on the PSC website about the IRP process, how utilities are expected to engage the general public, and guidance on what information utilities must share at public IRP stakeholder meetings.